

FORM 6-K
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

Report of Foreign Private Issuer

**Pursuant to Rule 13a-16 or 15d-16
of the Securities Exchange Act of 1934**

For the month of May 2010
Commission File Number 1-31318

Gold Fields Limited

(Translation of registrant's name into English)

150 Helen Rd.
Sandown, Sandton 2196
South Africa

(Address of principal executive offices)

Indicate by check mark whether the registrant files or will file annual reports under cover Form 20-F or Form 40-F.

Form 20-F...x... Form 40-F.....

Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(1): _____

Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(7): _____

Indicate by check mark whether by furnishing the information contained in this Form, the registrant is also thereby furnishing the information to the Commission pursuant to Rule 12g3-2(b) under the Securities Exchange Act of 1934.

Yes No ..x...

If "Yes" is marked, indicate below the file number assigned to the registrant in connection with Rule 12g3-2(b): 82- _____



GOLD FIELDS



MERCURIA
GLOBAL ENERGY SOLUTIONS



GOLD FIELDS PIONEERS CARBON TRADING IN THE GOLD INDUSTRY

26 May 2010, London and Johannesburg. Gold Fields Limited (Gold Fields) (JSE, NYSE, NASDAQ Dubai: GFI) is set to become the world's first gold mining company to sell Certified Emissions Reductions (CERs), the financial securities used to trade carbon emissions.

Gold Fields will derive the CERs from the capture of methane gas at its Beatrix Gold Mine in South Africa's Free State province. The company will sell 1,700,000 CERs to European energy trading company Mercuria Energy Trading SA under forward contracts which will run until 2016. The transaction was brokered by TFS Green, the carbon credits broker and environmental business of the worldwide Tradition Group.

CERs are traded globally and frequently bought by industrial companies as part of their efforts to alleviate their own carbon emission obligations. At current CER values and exchange rates, the CER contract is worth about R200 million.

Gold Fields will use the funds to finance a number of projects linked to the methane capture. The first phase, set for completion before the end of this year, comprises the installation of a methane extraction system underground and flares above surface at a cost of about R42 million. For the second phase Gold Fields is looking at ways of using the gas to generate electricity, thereby converting a harmful greenhouse gas into a valuable resource. Construction of a power generation plant, with the potential to generate about 5MW of electricity, is scheduled to start next year.

So far CERs-linked projects in Africa comprise less than 2% of the total number of projects registered by the Clean Development Mechanism (CDM) executive board, the global body tasked with administering CERs trading. Gold Fields' Beatrix project is one of around 15 South African projects that have to date received Designated National Authority verification from South Africa's Department of Mineral Resources.

The Gold Fields/Mercuria CER transaction, which is subject to final regulatory approvals, was yesterday recognised by the London-based Energy Risk magazine as the "Deal of the Year" for 2010 in its annual energy risk awards.

Gold Fields' Chief Executive Officer, Nick Holland, comments: "In addition to the obvious financial and environmental benefits, this project will result in a safer working environment for our people at Beatrix, as it eliminates the hazard of underground mine methane, and it is

one of many examples that shows Gold Fields' commitment to being the global leader in sustainable gold mining."

Methane emanates from underground geological features such as faults, fissures and dykes and escapes during the normal course of mining operations. If released into the atmosphere it is a potent greenhouse gas. At Beatrix the methane gas will be captured at source underground and then conveyed via a network of pipes to the surface, where the methane will be flared. Installation of the underground pipes is well underway.

"We are delighted to have been involved with this transaction – we firmly believe that projects in Africa and other developing countries linked to carbon emission reduction projects are where the market will be focused in the future," says Lucy Mortimer, global manager of TFS's CDM & Joint Initiative Business.

Mercuria Energy Trading's Jean Francois Steels said of the transaction: "This is our first transaction in Africa and follows shortly on the opening of our newest international office in South Africa. It shows our commitment to improving the geographical distribution of carbon finance to include the African continent."

The Beatrix development is the first in a number of carbon projects Gold Fields is investigating to bolster its sustainable mining practices. The strategy is underpinned by efforts to become more energy efficient and thus reduce dependence on coal-fired electricity.

Gold Fields was advised by Promethium Carbon, a South African carbon advisory company, throughout the development of the project, by assisting in the tender development, the evaluation and allocation of the tender.

About Gold Fields Limited

Gold Fields is one of the world's largest unhedged producers of gold with attributable production of 3.6 million ounces per annum from nine operating mines in South Africa, Ghana, Australia and Peru. Gold Fields also has an extensive growth pipeline with both greenfields and near mine exploration projects at various stages of development. Gold Fields has total attributable Mineral Reserves of 81 million ounces and Mineral Resources of 271 million ounces. Gold Fields is listed on JSE Limited (primary listing), the New York Stock Exchange (NYSE), the Dubai International Financial Exchange (DIFX), the Euronext in Brussels (NYSE) and the Swiss Exchange (SWX). For more information please visit www.goldfields.co.za.*

**Based on the annualised run rate for the second quarter of F2010*

About Mercuria Energy:

Mercuria Energy Group is an international group of companies active over a wide spectrum of energy markets including crude oil and refined petroleum products, natural gas, power, coal, biodiesel, vegetable oils and carbon emissions. Mercuria Energy is one of the world's five largest independent energy traders, with a strong commitment to growth in its carbon trading sector. The company has offices in twenty countries. Its largest trading floor is in Geneva, Switzerland.. For more information visit www.mercuria.com

About TFS Green:

TFS Green is part of Tradition, a global leader in interdealer broking. With offices in 24 countries, Tradition covers over 3,000 institutional clients and covers markets ranging from global foreign exchange, energy and environmental products, commodities, equities, coal, freight, precious metals, property and pulp & paper markets to money markets, derivatives and bonds and repos.

Tradition's CDM & JI business, TFS Green, is a market leader in its field. It was awarded Best Primary Originator GHG Emissions Kyoto Projects Credits (JI and CDM), Best Broker Spot & Futures GHG Emissions EU ETS, and received a total of 16 awards for its services within the environmental markets from Environmental Finance in the last awards – the highest number won by any company in the history of the awards. TFS was also awarded “Broker of the Year 2008” by Point Carbon. TFS has various offices around Asia, including China, Hong Kong, Japan, Singapore, and the Philippines. It also works through associate firms in Vietnam and India.

TFS Green is the trading name of Tradition Financial Services Ltd which is regulated by the Financial Services Authority in the UK. For more information, visit www.tfsgreen.com

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Signatures

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

GOLD FIELDS LIMITED

Date: 26 May 2010

By:

A handwritten signature in dark ink, appearing to read "Willie Jacobsz", written in a cursive style.

Name: Mr W J Jacobsz
Title: Senior Vice President: Investor
Relations and Corporate Affairs